

Amendments to the Claims

Claim 1 (Currently Amended) An optical apparatus for reading address information from an optical disc which has tracks for recording information and track spaces, formed between said the tracks, on which the address information to identify a position on said the optical disc is recorded, said optical apparatus comprising:

an optical head for irradiating the optical disc with light, said optical head including tracking detectors divided into a first detector and a second detector located to be along said the tracks, said first detector and said second detector for each detector detecting reflecting the light reflected from the optical disc and outputting a first detection signal, and a second detection signal, respectively;

an a balance adjusting circuit for address detection for receiving the first detection signal outputted by the said first detector and the second detection signal outputted by the said second detector, said balance adjusting circuit for address detection adjusting amplitudes of the first detection signal and the second detection signal and outputting an adjusted first detection signal and an adjusted second detection signal, respectively, at a position where the address information is recorded; ;

an address detection differential amplifying circuit for outputting an address detection differential signal which is a difference between the adjusted first detection signal and the adjusted second detection signal adjusted by the said balance adjusting circuit for address detection; and

an address detecting circuit for detecting the address information based on the address detection differential signal outputted from the said address detection differential amplifying circuit.

Claim 2 (Currently Amended) The optical disc apparatus according to claim 1, further comprising:

an amplitude detecting circuit for detecting the amplitudes of the first detection signal and the second detection signal, wherein

said balance adjusting circuit for address detection adjusting adjusts the amplitudes of the first detection signal and the second detection signal to become

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substantially equal based on the amplitudes of the first detection signal and the second detection signal detected by the said amplitude detecting circuit, and outputting outputs the adjusted first detection signal and the adjusted second detection signal.

Claim 3 **(Currently Amended)** The optical disc apparatus according to claim 1, further comprising:

a detecting section for detecting a reading ratio of the address information,
wherein

said balance adjusting circuit for address detection ~~adjusting amplitudes of~~ adjusts the amplitudes of the first detection signal and the second detection signal to maximize the reading ratio detected by the said detecting section.

Claim 4 **(Currently Amended)** The optical disc apparatus according to claim 2, wherein the optical disc has wobbles formed in the a radial direction at a predetermined cycle to be used for controlling rotation of the optical disc, and said optical disc apparatus further comprising comprises:

a balance adjusting circuit for wobble detection for receiving the first detection signal and the second detection signal, adjusting signal levels of the first detection signal and the second detection signal to be substantially equal, and outputting ~~an~~ a first adjusted detection signal and ~~an~~ a second adjusted detection signal; ;

a wobble detection differential amplifying circuit for outputting a wobble detection differential signal, which is a difference between the first adjusted detection signal and the second adjusted detection signal adjusted by the said balance adjusting circuit for wobble detection; ; and

a wobble signal detection circuit for detecting the a wobble based on the wobble detection differential signal outputted from the said wobble detection differential amplifying circuit.

Claim 5 **(Currently Amended)** The optical disc apparatus according to claim 4, wherein the said balance adjusting circuit for wobble detection adjusts the signal level of the first detection signal and the signal level of the second detection signal and minimizes

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the a jitter amount based on the jitter amount of the wobble detected by the said wobble signal detection circuit.

Claim 6 (Currently Amended) The optical disc apparatus according to claim 4, further comprising:

a detection section for detecting a reading ratio of the address information,
wherein

 said balance adjusting circuit for wobble detection ~~adjusting~~ adjusts the signal levels of the first detection signal and the second detection signal ~~in such a manner that to maximize~~ the reading ratio detected by the said detection section ~~becomes a maximum~~.

Claim 7 (Currently Amended) The optical disc apparatus according to claim 4, further comprising:

 a gain control circuit for making the amplitudes of the first detection signal and the second detection signal constant.

Claim 8 (Currently Amended) A method for reading the address information from an optical disc which has tracks for recording information and track spaces, formed between the tracks, on which the address information to identify the position on ~~said~~ the optical disc is recorded, said method comprising steps of:

 irradiating the optical disc with light;

 detecting the ~~reflected~~ light reflected from the optical disc and outputting a first detection signal and a second detection signal detected by ~~tracking~~ detectors divided into a first detector and a second detector, respectively, ~~in the~~ a track direction;

 receiving the first detection signal outputted by the first detector and the second detection signal outputted by the second detector;

 adjusting the amplitudes of the first detection signal and the second detection signal;

 outputting an adjusted first detection signal and an adjusted second detection signal, respectively;

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outputting an address detection differential signal which is a difference between the adjusted first detection signal and the adjusted second detection signal; and detecting the address information based on the outputted address detection differential signal outputted.
